

METHOD OF RADIATION TREATMENT FOR
FLUOROPOLYMER MATERIALS

Abstract of the Disclosure

A source of radiation (10, 12), particularly a pulsed accelerated electron beam, directs a beam of radiation through an irradiation chamber (14, 50). The irradiation chamber is depleted of oxygen and oxygen containing gases, such as being drawn to a vacuum of 10^{-1} or greater Torr by a vacuum pump (20, 52). Particulate fluoropolymer material is entrained (36) in substantially oxygen free gas and conveyed through the irradiation chamber. The accelerated electrons break chemical bonds in the fluoropolymer particles and electrostatically charge the particles. Magnetic fields (42, 60) of different polarity rotate the charged particles such that they are irradiated from different sides. The irradiated fluoropolymer particles are cooled (24) and separated (26) from the entraining gas. The entraining gas is recirculated through pneumatic line (34) for a continuous cycle. In an alternate batch processing embodiment, the fluoropolymer material is placed in the shallow container (50) which is sealed and evacuated. The container is conveyed through the pulsed electron beam.